Remarks:

Applicants appreciatively acknowledge the Examiner's confirmation of receipt of Applicants' claim for priority and certified priority document under 35 U:S.C. § 119(a)-(d).

Reconsideration of the application, as amended herein, is respectfully requested.

Claims 13 - 22 are presently pending in the application. Claims 13 and 17 have been amended.

Applicants gratefully acknowledge that item 5 of the above-identified Office Action indicated that claims 17 - 22 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants have amended claim 17 to include the limitations of Applicants' former claim 13, from which claim 17 formerly depended. As a result, Applicants' claims 17 - 22 are believed to be in condition for immediate allowance.

In item 2 of the Office Action, claims 13 and 14 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U. S. Patent Application Publication No. 2003/0001538 to Atmur ("**ATMUR**").

In item 4 of the Office Action, claims 15 - 16 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over **ATMUR** in view of U. S. Patent No. 5,936,386 to Heglund ("**HEGLUND**").

Applicants respectfully traverse the above rejections.

More particularly, claim 13 recites, among other limitations:

> d) **iteratively repeating steps a) - c)** until the operating point of the motor is adjusted to an optimal operating point for a predetermined setpoint speed. [emphasis added by Applicants]

As such, Applicants invention of claim 13 **iteratively repeats the particularly recited steps of the claim until the operating point of the motor is adjusted to an optimal operating point for a predetermined setpoint speed.** This is discussed in the specification of the instant application, for example, in paragraph [0007] of the instant application, which states:

> The desired value of the lead angle is preferably that value of the lead angle which maximises the efficiency of the motor for the allocated values of the speed and average power requirement. If the lead angle is approximated to this desired value, the resulting improvement in the efficiency of the motor for the same average power requirement of the motor results in an increase in the mechanical power, i.e. in an increase in the speed for the same load. By returning the speed to its desired value again by varying the average terminal voltage of the motor, **the optimal operating point of the motor for this desired speed is reached in the course of several iterations**. [emphasis added by Applicants]

See also, for example, paragraph [0035] of the instant application, which states:

> Since the mechanical power of the motor assumed by the microcontroller is based on an approximation, in reality no point is reached on the surface K but the efficiency of the motor 1 is improved by correcting the lead angle. Consequently, the speed and/or mechanical power of the motor increase and the estimated operating point migrates towards P2. The microcontroller 21 now recognises that the desired speed is exceeded and the control circuit 6 reduces the pulse duty factor preset by the afore-mentioned power control signal. If the lead angle remains the same, the speed and/or power decrease again and the point P3 is reached. At this point, as previously at point P0, the optimal lead angle is estimated from the characteristic map and set for the assumed operating point. **The procedure is repeated iteratively until it finally converges to the point P where the lead angle θ is optimally adjusted and the efficiency of the motor is actually equal to θ.** [emphasis added by Applicants]

However, among other limitations of Applicants' claims, the prior art cited in the Office Action fails to teach or suggest **iteratively repeating Applicants' particularly recited set of steps until the operating point of the motor is adjusted to an optimal operating point for a predetermined setpoint speed**, as required by Applicants' claims.

More particularly, among other limitations of Applicants' claims, the **ATMUR** reference does **not** teach or suggest, among other limitations of Applicants' claims, adusting an operating point of the motor, **iteratively, until** the operating point of

the motor is adjusted to an optimal operating point for a predetermined setpoint speed. Rather, **ATMUR** discloses a system and method **for reducing switching noise of a pulse-width-modulated controlled brushless direct current motor.** See, for example, paragraph [0002] of **ATMUR**. Paragraph [0005] of **ATMUR**, pointed to on page 2 of the Office Action as allegedly showing Applicants' former preamble and first limitation, states:

> In many BLDC motor systems, the speed of the BLDC motor is controlled by pulse modulating, such as pulse width modulating, the input voltage generated by the controller. By pulse-width-modulation (PWM) of the input voltage, the controller controls the average input currents to the windings by using "on" and "off" states. During the time the input currents through the windings are increasing, the voltage supply provides constant voltage to the controller at a level at least the as high as the motor voltage required for the desired speed of operation. Once the currents have reached the required levels for the desired speed of the motor, the duty cycle is changed to that required to maintain the currents at or near the required level of current.

However, nothing in the above-cited portion of **ATMUR**, or anywhere else in **ATMUR**, for that matter, teaches or suggests, among other limitations of Applicants' claims, **finding an optimal operating point of the motor through <u>iterative repeation</u>** of Applicants' particularly claimed steps adjusting, detecting and approximating steps.

For the foregoing reasons, among others, Applicants' claims are believed to be patentable over **ATMUR**.

The **HEGLUND** reference, cited in the Office Action in combination with **ATMUR** against Applicants' dependent claims 15 and 16, does not cure the above-discussed deficiencies of the **ATMUR** reference. As such, Applicants' claims are believed to be patentable over **ATMUR** and **HEGLUND**, whether taken alone, or in combination.

It is accordingly believed that none of the references, whether taken alone or in any combination, teach or suggest the features of claims 13 and 17. Claims 13 and 17 are, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on claims 13 or 17.

In view of the foregoing, reconsideration and allowance of claims 13 - 22 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a telephone call so that, if possible, patentable language can be worked out.

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If an extension of time for this paper is required, petition for extension is herewith made.

Please charge any fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner Greenberg Stemer LLP, No. 12-1099.

Respectfully submitted,

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